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最終頁に続く

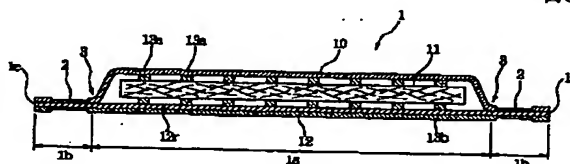
(54) 【発明の名称】 水解性の吸収性物品

(57) 【要約】

【課題】 従来、水解性の吸収性物品では、水解性を重視すると使用時の耐久性が悪くなるという問題があった。

【解決手段】 水解性の裏面層12と、水解性の表面層10と、裏面層12と表面層10の間に挟まれる水解性の吸収層11とを有する水解性の吸収性物品1である。吸収性物品1の周縁1eから所定幅の領域を外周領域1b、この外周領域1bよりも内側の領域を中間領域1aとしたとき、中間領域1aで、表面層10と吸収層11と裏面層12とが接着剤13a、13bで接合され、また、外周領域1bでは熱圧着されてラウンドシール部2が形成されている。乾燥時と湿潤時において、接着剤13a、13bで接合されている層間の接合強度が、外周領域1bでの層間の接合強度よりも大きい。この吸収性物品1は使用時における耐久性が高く、また使用後にトイレに流し捨てられると、容易に水解する。

図3



【特許請求の範囲】

【請求項1】 水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる水解性の吸収層とを有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域を外周領域、この外周領域よりも内側の領域を中間領域としたときに、前記中間領域で、前記吸収層と前記裏面層、及び／または前記吸収層と前記表面層とが水溶性または水膨潤性の接着剤で接合されており、乾燥時と湿潤時において、前記接着剤で接合されている前記中間領域での層間の接合強度が、前記外周領域での層間の接合強度よりも大きいことを特徴とする水解性の吸収性物品。

【請求項2】 湿潤時での層間の剥離速度は、前記中間領域よりも前記外周領域の方が速い請求項1記載の水解性の吸収性物品。

【請求項3】 前記外周領域は、吸収性物品の周縁から内側へ2～25mm幅の範囲内である請求項1または2記載の水解性の吸収性物品。

【請求項4】 前記外周領域では、層間が水溶性接着剤により接合されており、前記中間領域での前記接着剤が、前記外周領域の接着剤よりも水溶性が劣る接着剤である請求項1～3のいずれかに記載の水解性の吸収性物品。

【請求項5】 前記外周領域では水溶性接着剤で層間が接合されており、前記水溶性接着剤の単位面積当たりの塗工量が、前記外周領域よりも前記中間領域の方が多い請求項1～4のいずれかに記載の水解性の吸収性物品。

【請求項6】 前記中間領域及び外周領域に塗布される接着剤はポリビニルアルコールであり、この接着剤の塗工量は、前記外周領域で10～30g/m²であり、前記中間領域で30～200g/m²である請求項5記載の水解性の吸収性物品。

【請求項7】 前記外周領域では、各層が接着剤を介在することなく加圧により圧着されている請求項1～3のいずれかに記載の水解性の吸収性物品。

【請求項8】 前記外周領域では、各層が水素結合されている請求項7記載の水解性の吸収性物品。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、生理用ナプキン、バンティライナー、尿取りパッド、おむつなどとして用いられる水解性の吸収性物品に関する。

【0002】

【従来の技術】近年、生理用ナプキンやバンティライナーや尿取りパッド、おむつなどの吸収性物品として、水洗トイレに流し捨てることのできる吸収性物品が開発されている。水解性の吸収性物品としては、例えば特開平8-38547号公報や、特開平8-19571号公報に開示されており、水解性の吸収層と、それを挟む水解性の表面層と裏面層とから構成されている。

【0003】

【発明が解決しようとする課題】これら水解性の吸収性物品では、使用中の経れや破れを防止して製品形状を保持するため、吸収性物品を構成する前記各層が比較的強く接合されている。しかし、接着強度が高い接着剤を使用して各層を接合すると、使用後にトイレに流し捨てたときに吸収性物品が容易に水解しなくなる。これは、各層間が容易に分離しないので、各層の間に抱かれている空気存在で浄化槽や下水道中で表面に浮いてしまい、各層が水中へ分散されなくなってしまうためである。一方、水解性を重視して各層間の接合強度を弱くしてしまうと、使用中に経れ等が発生し、吸収性物品の形状が維持できない。

【0004】本発明の目的は、上記従来の課題を解決するものであり、使用中にその形状が確実に保持され、且つ使用後にトイレに流し捨てられたときに、容易に水解する水解性の吸収性物品を提供することにある。

【0005】

【課題を解決するための手段】上記従来の課題及び目的は、水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる水解性の吸収層とを有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域を外周領域、この外周領域よりも内側の領域を中間領域としたときに、前記中間領域で、前記吸収層と前記裏面層、及び／または前記吸収層と前記表面層とが水溶性または水膨潤性の接着剤で接合されており、乾燥時と湿潤時において、前記接着剤で接合されている前記中間領域での層間の接合強度が、前記外周領域での層間の接合強度よりも大きいことを特徴とする水解性の吸収性物品によって達成される。

【0006】また、湿潤時での層間の剥離速度は、前記中間領域よりも前記外周領域の方が速いものとなる。

【0007】本発明の吸収性物品では、乾燥時と湿潤時の双方において、外周領域よりも中間領域の方が各層の接合強度が高くなっている。このような構造にすると、使用中における吸収性物品の乾燥時及び湿潤時において各層が互いに離れにくく、経れが発生しにくい。したがって、吸収性物品は形状保持力が高く、耐久性に優れたものとなる。また湿潤時における外周領域での層間の接合力を弱く、剥離速度も外周領域で中間領域よりも速くしておくことにより、使用後に水洗トイレへ流し捨てられたとき、外周領域から容易に各層が分離する。その結果、中間領域の内部の空気が外周領域から抜け出て浄化槽での浮きを防止できる。また中間領域での接合強度が高く湿潤時での層間の剥離が遅くても、浄化槽内で沈んだときに外周領域での層間の剥がれをきっかけとして、中間領域での各層の剥がれを促進できるようになる。その結果、吸収性物品がスムーズに分解される。

【0008】なお、前記外周領域とは、例えば吸収性物品の周縁から2～25mm幅の範囲内である。また中間

領域とは、前記外周領域以外の部分を意味しており、この中間領域の少なくとも一部分に接着剤が塗布される。

【0009】また、前記外周領域では、層間が水溶性接着剤により接着されており、前記中間領域での前記接着剤が、前記外周領域の接着剤よりも水溶性が劣る接着剤であることが好ましい。

【0010】または、前記外周領域では水溶性の接着剤で層間が接合されており、前記水溶性接着剤の単位面積当たりの塗工量が、前記外周領域よりも前記中間領域の方が多くしてもよい。

【0011】この場合、好ましくは前記接着剤はポリビニルアルコールであり、この接着剤の塗工量は、前記外周領域で10～30 g/m²であり、前記中間領域で30～200 g/m²である。

【0012】また本発明において、前記外周領域では、各層が接着剤を介することなく加圧により圧着されていてもよい。例えば、前記外周領域では、各層が水素結合されているものであってもよい。

【0013】あるいは外周領域で、各層が加圧されてなく、何等シールが形成されていなくてもよい。

【0014】

【発明の実施の形態】以下、本発明を、図面を参照しながら説明する。図1は、吸収性物品を表側（装着者に対面する側）から見た斜視図、図2は図1に示す吸収性物品を表側から見た平面図、図3は図1及び図2に示した吸収性物品のI I I—I I I線の断面図である。なお、吸収性物品の長手方向をY方向とし、Y方向とはほぼ直交する幅方向をX方向とする。

【0015】図1及び図2に示す吸収性物品はバンティライナーまたは生理用ナプキンとして使用される本発明の水解性の吸収性物品である。この吸収性物品1は、図3に示すように装着者側に向けられる水解性で且つ液透過性の表面層10と、水解性の裏面層12と、表面層10と裏面層12との間に挟まれる水解性の吸収層11とで構成されている。また、裏面層12の吸収層11側には、熱可塑性樹脂層12rが塗工されている。

【0016】吸収性物品1の周縁1eから所定幅間隔をあけた境界線3までの領域である外周領域1bでは、表面層10と裏面層12とのみが積層している。この外周領域1bにおいて吸収層11を取り囲むようにして加熱加圧処理が施され、表面層10と裏面層12との間に位置する水溶性の熱可塑性樹脂層12rが溶融し、表面層10と裏面層12とを接合するラウンドシール部2が形成されている。

【0017】さらに、前記外周領域1bより内側に位置する中間領域1aでは、表面層10と吸収層11とが、水溶性または水膨潤性の接着剤13aによって、また裏面層12と吸収層11とが、同じく水溶性または水膨潤性の接着剤13bによって互いに接合されている。中間領域1aでは、前記接着剤13aと13bがスパイラル

状に塗布され、または点在するように塗布されて、表面層10と吸収層11および裏面層12と吸収層11とが部分的に接着接合されている。

【0018】ここで、中間領域1aにおける表面層10と吸収層11との接合強度、および吸収層11と裏面層12との接合強度は、外周領域1bにおけるラウンドシール部2による表面層10と裏面層12との接合強度よりも強くなっている。このため、吸収性物品1の使用時において、中間領域1aの層間の剥離が生じにくくな

り、中間領域1aの形状が保持され、搓れや破れが発生しにくくなる。また湿潤時においても中間領域1aにおける層間の接合強度が、外周領域1bでの層間の接合強度よりも強いと、体液が表面層10を透過して吸収層11に与えられたときも、中間領域1aでの層間の剥離が生じにくくなり、形状を保持しやすくなる。

【0019】ただし、外周領域1bでは層間の接合力が弱く、また湿潤時で層間の剥離速度が、前記中間領域1aよりも前記外周領域1bの方で速いために、吸収性物品1の使用後にトイレに流し捨てられ、浄化槽に入ったときに多量の水により外周領域1bにおける各層の接合が容易に且つ迅速に外れる。そのため、これをきっかけとして、中間領域1aでの表面層10と吸収層11との間へ、且つ吸収層11と裏面層12との間へ水が急速に侵入し、空気が排出されて浄化槽内に沈みやすくなる。浄化槽内へ沈むと中間領域1aに多量の水が与えられることになり、中間領域の接着剤13a、13bの水溶性が劣っていても、この多量の水により層間の剥離が促進され、吸収性物品1が水で分解されやすくなる。

【0020】このとき、外周領域1b、すなわち周縁1eから境界線3までの間隔は2～25 mmの範囲であることが好ましく、さらに好ましくは8～20 mmである。前記上限より大きいと、中間領域1aにおける層間の接合強度が必要量得られず、吸収性物品1の形状保持力が低下してしまう。また、前記下限より小さいと、すなわち各層間の接合強度が高い中間領域1aが周縁1eに接近していると、吸収性物品1の水解性が低下し、また吸収性物品1が肌に当たったときの感触が悪くなってしまう。

【0021】前記ラウンドシール部2は、前記外周領域1bの幅の全域に渡って形成されていてもよく、または図2に示すようにラウンドシール部2が、前記外周領域1b内において、外周領域1bの幅寸法よりも小さい幅で形成されていてもよい。またラウンドシール部2は、吸収性物品の全周を囲むように形成されていてもよいし、X方向の両側の側部のみ形成されていてもよい。前記ラウンドシール部2の幅は、例えば1～4 mm程度である。あるいは、ラウンドシール部は吸収性物品の外周に沿って間隔を開けて形成されていてもよい。

【0022】また中間領域1aにおいて、接着剤13a、13bが、スパイラル状または水玉模様状に、互い

に間隔を開けて各層間の全域に分散して設けられていると、浄化槽内などで外周領域1bの層間が剥離したときに、表面層10と吸収層11との間および吸収層11と裏面層12との間への水の侵入が容易となり、中間領域1aにおいてさらに水解が進み易いものとなる。

【0023】外周領域1bでのラウンドシール部2の接着強度を弱く且つ湿潤時の層間の剥離速度を速くし、中間領域1aでの接着強度をラウンドシール部2よりも高くし、且つ湿潤時の層間の剥離速度をラウンドシール部2よりも遅くするためには、ラウンドシール部2において接着力を発揮する水溶性の熱可塑性樹脂層12rと、中間領域1aに塗工される水溶性または水膨潤性の接着剤13a、13bとで異なるものを使用することが好ましい。

【0024】例えば、前記ラウンドシール部2を形成する為に、裏面層12の吸収層側に設けられている熱可塑性樹脂層12rは、水溶性のポリビニルアルコールフィルムであり、裏面層12を形成する水解性の不織布または紙に、前記ポリビニルアルコールのフィルムがラミネートされたものが使用される。また中間領域1aに塗工される接着剤13a、13bは、水溶性または水膨潤性であり、例えばポリビニルアルコールのホットメルトが使用される。

【0025】外周領域1bにおいて水溶性のポリビニルアルコールでラウンドシール部2が形成されていると、浄化槽内などで外周領域1bでのラウンドシール部2の層間剥離が急速に行われ、その結果外周領域1bから中間領域1aへ水が浸入し、吸収性物品が浄化槽内に沈みやすくなる。浄化槽内に沈んで多量の水が与えられると、中間領域1aにおいて、表面層10、吸収層11および裏面層12が水で分散され、その結果接着剤13a、13bが水膨潤性でありあるいは水溶速度の遅いものであっても、各層の水解によりやがて吸収性部品が分解される。

【0026】この場合、接着剤13a、13bのケン化度や重合度を変えることにより、前記ラウンドシール部2での接着剤である水溶性のポリビニルアルコールフィルムよりも接着力が高く且つ水溶性が劣るように調整することができる。接着剤13a、13bの接着力を高くし且つ水溶性を低下させておくことにより、着用時に体液が中間領域1aに与えられたときに、接着剤13a、13bが溶解しにくく、形状の保持が可能である。そして浄化槽内などでは外周領域1bから浸入する水により中間領域1aでの層間の剥離も促進される。接着剤13a、13bとして使用可能な水溶性接着剤は、例えば、メチルセルロース、ヒドロキシエチルセルロース、カルボキシメチルセルロースなどのセルロース誘導体、ポリビニルアルコール、アルギン酸ソーダ、ポリアクリル酸ソーダ、ポリアクリル酸エーテル、ポリビニルピロリドン、イソブチレンと無水マレイン酸との共重合体の

ような水溶性高分子、デンプン、デキストリンなどをあげることができる。この中でも、ポリビニルアルコールが好ましい。

【0027】また、ラウンドシール部2に用いられる接着剤と、中間領域1aに塗布される接着剤13a、13bを、ほぼ同等の水溶性を呈する接着剤とし、その塗工量を変え、ラウンドシール部2での塗工量よりも中間領域1aでの塗工量を多くして、外周領域1bと中間領域1aとで接着強度を変化させてもよい。

【0028】この場合、接着剤13aや13bとして用いられる水溶性のポリビニルアルコールの塗工量（接着部の実目付）は、30～200g/m²であることが好ましい。この場合、吸収性物品1の使用時に形状を保持させるのに十分な接合強度を発揮する。また、ラウンドシール部2における表面層10と裏面層11との間に塗工されるポリビニルアルコールは10～30g/m²塗工されていることが好ましい。この塗工量であると、水洗トイレや浄化槽内で、外周領域1bでのラウンドシール部2での層間の剥離が急速に行えるようになる。

【0029】裏面層12は、水洗トイレに流したときにその水流によって、あるいは浄化槽内で容易に分散されるものであり、水分散性繊維を含む水解紙や、水解性不織布等で形成できる。例えば、（1）原料としてパルプを用い、パルプ繊維どうしの水素結合でシート状に形成した水解紙、（2）原料としてパルプやレーヨンなどの水分散性繊維を用い、繊維を結合させる水溶性のバインダーを含有させてシート状に形成した水解紙、（3）水分散性繊維を交絡させてシート状に形成した水解紙、

（4）比較的短い繊維長をもつ水分散性繊維をウォータージェット処理により交絡させた水解性の不織布などをあげることができる。なお、裏面層12の外側（外部装着体に対面する側）には、ポリビニルアルコールや不飽和カルボン酸からなる共重合体などの水溶性樹脂を塗工して、不透液性となるように処理することが好ましい。

【0030】吸収層11は、例えば水解紙やパルプや不織布から形成できる。例えば、エアレイドパルプなどを目付50～70g/m²程度を用いて形成できる。水解紙で形成する場合、比較的厚みの薄い水解紙を複数枚重ねて形成すると水解性が良好であり好ましい。例えば、目付が10～20g/m²である水解紙を4～8枚程度重ねて吸収層11を形成する。また、ポリビニルアルコールなどの水膨潤性樹脂を塗布した水解紙を積層させて形成してもよい。

【0031】表面層10は、例えば水解性のスパンレース不織布である。または、水解性の不織布に複数枚の水解紙を積層させて形成しても良い。この場合、不織布及び水解紙は水素結合やニードリング処理によって一体化させても良い。また、表面層10は排泄液を表面層10の下に吸収層11へと導くため、図1に示すように複数の開孔部が全面的に設けられることが好ましい。

【0032】図4は、本発明の他の実施の形態を示す断面図である。図4に示す吸収性物品1Aは、裏面層12に熱可塑性樹脂層12r（例えば水溶性のポリビニルアルコールフィルムのラミネート）が設けられていない点で、図3に示す吸収性物品1と異なる。図4に示す吸収性物品1Aでは、樹脂層12rが設けられていないため、外周領域1bのラウンドシール部2において表面層10と裏面層12とが、少量の水分を含んだ状態で加熱加圧処理され、互いに繊維間の水素結合によって接合されている。

【0033】水素結合は、接着剤による接合強度より弱い。したがって、吸収性物品1Aにおいても、中間領域1aの表面層10と吸収層11との接着剤13aによる接合強度が、外周領域1bにおける接合強度より高いものとなっている。接合強度の弱い水素結合によるラウンドシール部2は、吸収性物品の外周領域、すなわち周縁1eから2～25mmの幅の範囲、さらに好ましくは8～20mmの幅の範囲内に形成されているが、この領域は装着時に体の動きによって緩れが発生しにくい部分であるため、中間領域1aにおいて前記のように接着剤13a、13bが形成されていることにより、吸収性物品全体としての形状の保持性がよく、着用時に緩れや層間の剥離や破れが生じにくい。

【0034】またこの水素結合は、吸収性物品1Aが水中に廃棄された瞬間に外れるので、外周領域1bから急速に水が侵入し、結果、吸収性物品が急速に且つ確実に水解される。なお、本発明では、外周領域において表面層11と裏面層12とを加圧したり加熱せず、ラウンドシール部を形成しなくてもよい。この場合も中間領域1aの接着剤13a、13bにより形状の保持が可能である。

【0035】図5は、本発明のさらに他の実施の形態を示す平面図である。本発明ではラウンドシール部2を吸収性物品の全周に設ける必要はなく、図5に示す吸収性物品1Bのように、吸収性物品のX方向の両側部のみに設けるものであってもよい。この場合、吸収性物品1Bが水中に廃棄されると、Y方向における端部より水が吸収性物品1Bの内部へと急速に浸透するため、吸収性物品1Bが容易に水解される。その他、ラウンドシール部2は間欠線状に設けてもよい。

【0036】なお本発明においては、好ましくは吸収性物品の本体の裏側、すなわち裏面層12の裏面（外部装着体に対面する側）には、その全面に粘着部が設けられ、さらに粘着部の粘着力を使用直前まで保護する離型紙が設けられる。この剥離紙は水解性であることが好ましい。さらには、吸収性物品の包装袋なども水解性であることが好ましい。

【0037】

【実施例】以下、実施例をあげて本発明を説明するが、本発明はこれに限定されるものではない。

【0038】本発明の実施例として、図3または図4に示す吸収性物品としてバンティライナーを作成した。このバンティライナーの長手寸法は140mm、幅寸法は55mmである。このとき、表面層10は目付45g/m²の湿式спанレース不織布、吸収層11は目付60g/m²のエアレイドバルブを用いた。

【0039】実施例2での裏面層12は、目付45g/m²の湿式спанレース不織布に目付30g/m²で、水溶性のポリビニルアルコールフィルムがラミネートされたもの（図3に示す樹脂層12rが設けられた裏面層12）である。

【0040】実施例1での裏面層12は、目付45g/m²の湿式спанレース不織（図4に示す裏面層12）で前記水溶性のポリビニルアルコールフィルムがラミネートされていないものを使用した。

【0041】また、実施例1と実施例2での接着剤は、水溶性のポリビニルアルコールホットメルト接着剤を用い、塗工量は7g/m²で、径18mmのスパイラル状に塗工した。また、塗工した範囲は、中間領域における18×100mmの領域のみである。

【0042】さらに、ラウンドシール部2は、バンティライナーの周縁から3mmの位置から中間領域側へ幅5mmで熱圧着させた。このときの熱圧着の条件は、120℃、3秒間、392.2kPaである。実施例2では前記の熱圧着を行い、実施例1では熱圧着を行わず、ラウンドシール部を形成しなかった。

【0043】比較例は、各層が前記実施例と同じであり、比較例1は中間領域に接着剤を塗布せず、ポリビニルアルコールフィルムを用いたラウンドシール部のみを形成した。比較例2では、ラウンドシール部を形成せず、中間領域1aにおいて非水溶性のホットメルト型接着剤で各層を接着した。

【0044】得られた実施例と比較例のバンティライナーについて、それぞれ着用テスト、浄化槽テスト、水解性テストの測定を行なった。結果を表1に示す。また、比較例についても実施例同様に試験を行なった。

【0045】（着用テスト） サンプルをバネラー10人に使用してもらう。使用後、サンプルの状態を目視にて観察する。評価方法は次のとおりである。○：破れなし。×：破れ発生。

【0046】（浄化槽テスト） サンプルを便器から浄化槽へ流し入れ、その後のサンプルの挙動を目視にて観察した。評価方法は次のとおりである。○：浄化槽へ入った瞬間に各層がバラバラになる。×：各層間が分離しない。

【0047】（水解性テスト） JIS P 4501の水解性試験方法に準じて測定した。詳細を述べると、サンプルを縦10cm横10cmに切断したものを、イオン交換水300mlが入った容量300mlのビーカーに投入して、回転子を用いて攪拌を行った。回転数は

600rpmである。この時のサンプルの分散状態を経時的に観察し、分散されるまでの時間を測定した。評価方法は次の通りである。○：100秒以内に水解。×：＊

＊水解しない。
【0048】
【表1】

表1

	実施例1	実施例2	比較例1	比較例2
表面層と吸収層の間の接着剤	有り	有り	なし	有り(非水溶性接着剤)
吸収層と裏面層との間の接着剤	有り	有り	なし	有り(非水溶性接着剤)
裏面層にラミネートされた樹脂層	なし	有り	有り	なし
ラウンドシール	なし	有り	有り	なし
着用テスト	○	○	×	○
浄化槽テスト	○	○	×	×
水解性テスト	○	○	○	×

【0049】

【発明の効果】以上詳述したように、本発明の水解性の吸収性物品においては、吸収性物品を構成する各層が分離しにくいので、使用時における形状保持性が高く、耐久性が高い。また、水洗トイレに流し捨てたときは、各層が外周領域から容易に分離する為、容易に且つ確実に水解する。

【図面の簡単な説明】

【図1】本発明の吸収性物品の斜視図

【図2】図1に示した吸収性物品の平面図

【図3】図1及び図2に示した吸収性物品のⅠⅠⅠ-ⅠⅠⅠ線の断面図

【図4】本発明の吸収性物品の他の実施の形態を示す断面図

20※【図5】本発明の吸収性物品のさらに他の実施の形態を示す平面図

【符号の説明】

1 吸収性物品

1a 中間領域

1b 外周領域

1e 周縁部

2 ラウンドシール部

3 境界線

10 表面層

11 吸収層

12 裏面層

12r 熱可塑性の水溶性樹脂層

13a、13b 水溶性または水膨潤性の接着剤

【図1】

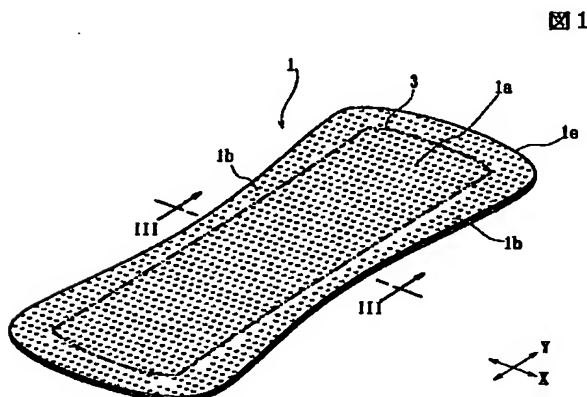


図1

【図3】

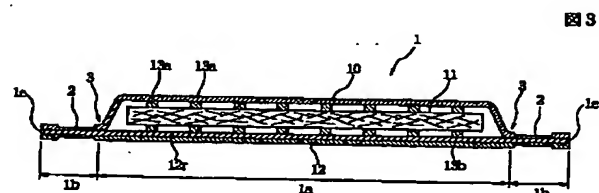
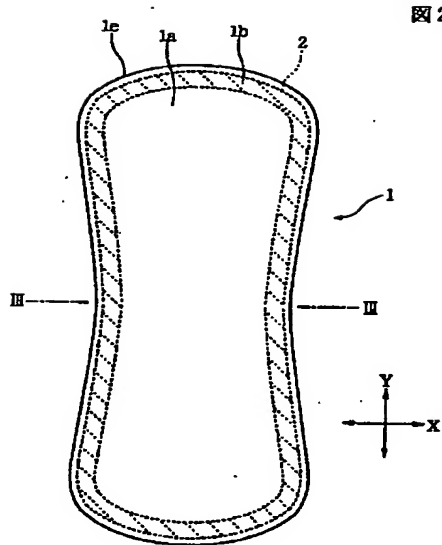
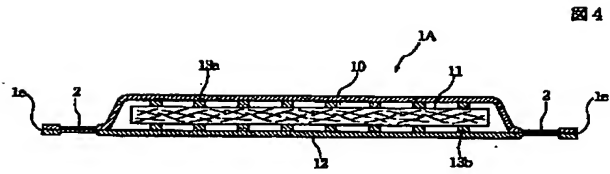


図3

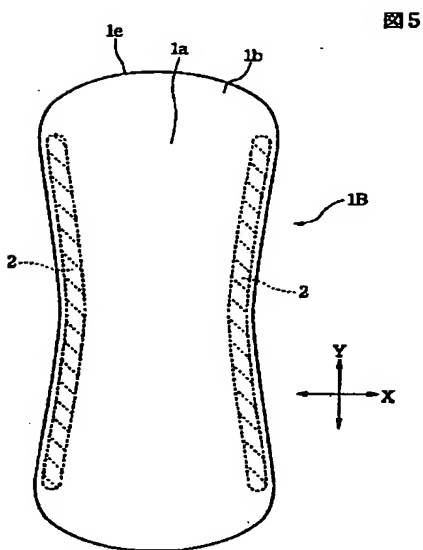
【図2】



【図4】



【図5】



フロントページの続き

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[Theme code (reference)]

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4C003

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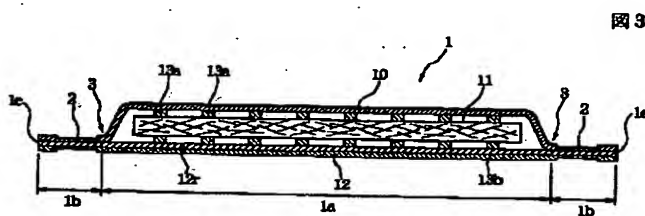
(57) [Abstract]:

[Technical problem] In the conventional water-soluble absorptivity goods, when water solubility was thought as important, there was a problem that the endurance at the time of use worsened.

[Means for Solution] They are the water-soluble absorptivity goods 1 which have

the water-soluble flesh-side surface layer 12, the water-soluble surface layer 10, and the flesh-side surface layer 12 and the water-soluble absorption layer 11 pinched between surface layers 10. When the field inside periphery field 1b and this periphery field 1b is set to staging-area 1a for the field of periphery 1e of the absorptivity goods 1 to predetermined width of face, by staging-area 1a, a surface layer 10, the absorption layer 11, and the flesh-side surface layer 12 are joined with Adhesives 13a and 13b, and thermocompression-bonding is carried out in periphery field 1b; and the round seal section 2 is formed. The bonding strength between the layers joined with Adhesives 13a and 13b at the time of desiccation and humidity is larger than the bonding strength between the layers in periphery field 1b. If the endurance at the time of use is high and is passed and thrown away into a toilet after use, hydration of these absorptivity goods 1 will be carried out easily.

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CLAIMS

[Claim(s)]

[Claim 1] A water-soluble flesh-side surface layer The surface layer of liquid permeability that it is [and] water solubility The water-soluble absorption layer pinched between said flesh-side surface layers and surface layers When it is water-soluble absorptivity goods equipped with the above and the field of predetermined

width of face is made into a staging area from the periphery of absorptivity goods, a periphery field and the field inside this periphery field by said staging area Said absorption layer and said flesh-side surface layer, and/or said absorption layer and said surface layer are joined with the adhesives of water solubility or water bloating tendency, and it sets at the time of desiccation and humidity. Bonding strength between the layers in said staging area joined with said adhesives is characterized by being larger than the bonding strength between the layers in said periphery field. [Claim 2] The exfoliation rates between the layers in the time of humidity are water-soluble absorptivity goods according to claim 1 with said periphery field quicker than said staging area.

[Claim 3] Said periphery fields are water-soluble absorptivity goods according to claim 1 or 2 which are within the limits of 2-25mm width of face from the periphery of absorptivity goods to the inside.

[Claim 4] Water-soluble absorptivity goods according to claim 1 to 3 which are the adhesives with which between layers has pasted up with water-soluble adhesives, and water solubility is inferior to the adhesives of said periphery field in said adhesives in said staging area in said periphery field.

[Claim 5] In said periphery field, between layers is joined with water-soluble adhesives, and the amount of coating per unit area of said water-soluble adhesives is water-soluble absorptivity goods according to claim 1 to 4 with more said staging area than said periphery field.

[Claim 6] They are the water-soluble absorptivity goods according to claim 5 which the adhesives applied to said staging area and a periphery field are polyvinyl alcohol, the amount of coating of these adhesives is 10 - 30 g/m² in said periphery field, and are 30 - 200 g/m² in said staging area.

[Claim 7] Water-soluble absorptivity goods according to claim 1 to 3 stuck by pressurization by pressure in said periphery field, without each class intervening adhesives.

[Claim 8] Water-soluble absorptivity goods according to claim 7 with which hydrogen bond of each class is carried out in said periphery field.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the water-soluble absorptivity goods used as a sanitary napkin, a panties liner, a urine picking pad, a diaper, etc.

[0002]

[Description of the Prior Art] In recent years, the absorptivity goods which can be poured and thrown away into a rinsing toilet as absorptivity goods, such as a sanitary napkin, a panties liner, and a urine picking pad, a diaper, are developed. As water-soluble absorptivity goods, it is indicated by JP,8-38547,A and JP,8-19571,A, for example, and consists of a water-soluble absorption layer, and the water-soluble surface layer and water-soluble flesh-side surface layer which sandwich it.

[0003]

[Problem(s) to be Solved by the Invention] In the absorptivity goods of these water solubility, in order to get twisted under use, to prevent ***** and to hold a product configuration, said each class which constitutes absorptivity goods is joined comparatively strongly. However, if bond strength joins each class using high adhesives, when it passed and throws away into a toilet after use, absorptivity goods will not carry out hydration easily. Since between each class does not dissociate easily, this is because it floats in a front face all over a septic tank or sewerage in existence of the air currently held between each class and each class is no longer distributed underwater. if water solubility is thought as important and bonding strength between each class is weakened on the other hand — under use — getting twisted — etc. — it generates and the configuration of absorptivity goods cannot be maintained.

[0004] The above-mentioned conventional technical problem is solved, the configuration is certainly held during use, and the purpose of this invention is to offer the water-soluble absorptivity goods which carry out hydration easily, when it is passed and thrown away into a toilet after use.

[0005]

[Means for Solving the Problem] In the water-soluble absorptivity goods with which the technical problem and the purpose of the above-mentioned former have a water-soluble flesh-side surface layer, a water-soluble and liquid penetrable surface layer, and said flesh-side surface layer and the water-soluble absorption layer pinched between surface layers When the field of predetermined width of face is made into a staging area from the periphery of absorptivity goods, a periphery field and the field inside this periphery field by said staging area Said absorption layer and said flesh-side surface layer, and/or said absorption layer and said surface layer are joined with the adhesives of water solubility or water bloating tendency, and it sets at the time of desiccation and humidity. The bonding strength between the layers in

said staging area joined with said adhesives is attained by the water-soluble absorptivity goods characterized by being larger than the bonding strength between the layers in said periphery field.

[0006] Moreover, the exfoliation rate between the layers in the time of humidity becomes what has the quick one of said periphery field from said staging area.

[0007] In the staging area, in the absorptivity goods of this invention, the bonding strength of each class is high rather than the periphery field in the both sides at the time of desiccation and humidity. If it is made such structure, it will be hard to leave each class mutually at the time of desiccation of absorptivity goods in use and humidity, and will be hard to generate ****. Therefore, absorptivity goods have high configuration holding power, and it becomes the thing excellent in endurance.

Moreover, it is weak, and when the exfoliation rate also makes it quicker than a staging area in the periphery field, and it passes to a rinsing toilet and is thrown away into it after use, each class separates easily the junction force between the layers in the periphery field at the time of humidity from a periphery field.

Consequently, the air inside a staging area escapes from and comes out from a periphery field, and the float in a septic tank can be prevented. Moreover, even if the bonding strength in a staging area is high and exfoliation between the layers in the time of humidity is slow, when it sinks within a septic tank, peeling of each class in a staging area can be promoted taking advantage of peeling between the layers in a periphery field. Consequently, absorptivity goods are disassembled smoothly.

[0008] In addition, said periphery field is within the limits of the periphery of for example, absorptivity goods to 2-25mm width of face. Moreover, the staging area means parts other than said periphery field, and adhesives are applied to a part of this staging area [at least].

[0009] Moreover, in said periphery field, between layers has pasted up with water-soluble adhesives, and it is desirable that they are the adhesives with which water solubility is inferior to the adhesives of said periphery field in said adhesives in said staging area.

[0010] Or in said periphery field, between layers is joined with water-soluble adhesives, and; in said staging area, the amount of coating per unit area of said water-soluble adhesives may make [many] it rather than said periphery field.

[0011] In this case, said adhesives are polyvinyl alcohol preferably, and the amount of coating of these adhesives is 10 - 30 g/m² in said periphery field, and is 30 - 200 g/m² in said staging area.

[0012] Moreover, in this invention, pressurization may be stuck by pressure in said periphery field, without each class intervening adhesives. For example, hydrogen bond of each class may be carried out in said periphery field.

[0013] Or in a periphery field, each class is not pressurized and the seal does not need to be formed at all.

[0014]

[Embodiment of the Invention] Hereafter, this invention is explained, referring to a

drawing. The perspective view as which drawing 1 regarded absorptivity goods from the side front (side which meets a wearing person), the top view which looked at the absorptivity goods which show drawing 2 to drawing 1 from the side front, and drawing 3 are the sectional views of the III-III line of the absorptivity goods shown in drawing 1 and drawing 2. In addition, the longitudinal direction of absorptivity goods is made into the direction of Y, and the cross direction which intersects perpendicularly with the direction of Y mostly is made into the direction of X.

[0015] The absorptivity goods shown in drawing 1 and drawing 2 are the water-soluble absorptivity goods of this invention used as a panties liner or a sanitary napkin. These absorptivity goods 1 consist of water-soluble absorption layers 11 pinched between the water-soluble and liquid penetrable surface layer 10 turned to a wearing person side as shown in drawing 3, the water-soluble flesh-side surface layer 12, and a surface layer 10 and the flesh-side surface layer 12. Moreover, coating of the thermoplastics layer 12r is carried out to the absorption layer 11 side of the flesh-side surface layer 12.

[0016] In periphery field 1b which opened predetermined width-of-face spacing from periphery 1e of the absorptivity goods 1 and which is a field to a boundary line 3, only the surface layer 10 and the flesh-side surface layer 12 are carrying out the laminating. As the absorption layer 11 is surrounded in this periphery field 1b, heating pressure treatment is performed, water-soluble thermoplastics layer 12r located between a surface layer 10 and the flesh-side surface layer 12 fuses, and the round seal section 2 which joins a surface layer 10 and the flesh-side surface layer 12 is formed.

[0017] Furthermore, in staging-area 1a located inside said periphery field 1b, the flesh-side surface layer 12 and the absorption layer 11 are the same, and the surface layer 10 and the absorption layer 11 of each other are joined by adhesives 13a of water solubility or water bloating tendency by adhesives 13b of water solubility or water bloating tendency again. In staging-area 1a, it is applied so that said adhesives 13a and 13b may be applied in the shape of a spiral or it may be dotted, and the surface layer 10, the absorption layer 11 and the flesh-side surface layer 12, and the absorption layer 11 are joined with glue partially.

[0018] Here, the bonding strength of the surface layer 10 and the absorption layer 11 in staging-area 1a and the bonding strength of the absorption layer 11 and the flesh-side surface layer 12 are stronger than the bonding strength of the surface layer 10 and the flesh-side surface layer 12 by the round seal section 2 in periphery field 1b. For this reason, it is hard coming to generate exfoliation between the layers of staging-area 1a at the time of use of the absorptivity goods 1, the configuration of staging-area 1a is held, and it gets twisted, and is hard coming to generate *****. Moreover, since the bonding strength between the layers in staging-area 1a is stronger than the bonding strength between the layers in periphery field 1b also in the time of humidity, also when body fluid penetrates a surface layer 10 and is given to the absorption layer 11, it is hard coming to generate exfoliation between the

layers in staging-area 1a, and becomes easy to hold a configuration.

[0019] However, in periphery field 1b, the junction force between layers is weak, and in the time of humidity, rather than said staging-area 1a, since it is quick in the direction of said periphery field 1b, the exfoliation rate between layers is passed and thrown away into a toilet after use of the absorptivity goods 1, and when it goes into a septic tank, junction of each class in periphery field 1b separates easily and quickly with a lot of water. Therefore, it passes taking advantage of this between the surface layer 10 in staging-area 1a, and the absorption layer 11, and water trespasses upon between the absorption layer 11 and the flesh-side surface layer 12 quickly, air is discharged, and it becomes easy to sink in a septic tank. If it sinks into a septic tank, even if a lot of water will be given to staging-area 1a and the water solubility of the adhesives 13a and 13b of a staging area is inferior, exfoliation between layers is promoted with these water of a lot of, and the absorptivity goods 1 become that it is easy to be decomposed with water.

[0020] At this time, it is desirable still more desirable that it is the range of 2-25mm, and spacing from periphery field 1b, i.e., periphery 1e, to a boundary line 3 is 8-20mm. if larger than said upper limit, the configuration holding power of initial-complement profit **** and the absorptivity goods 1 will decline [the bonding strength between the layers in staging-area 1a]. Moreover, if smaller than said minimum (i.e., if staging-area 1a with the high bonding strength between each class is approaching periphery 1e), a feel when the water solubility of the absorptivity goods 1 falls and the absorptivity goods 1 are equivalent to the skin will worsen.

[0021] As it goes across said round seal section 2 throughout the width of face of said periphery field 1b, and it may be formed or it is shown in drawing 2, the round seal section 2 may be formed in said periphery field 1b by width of face smaller than the width-of-face dimension of periphery field 1b. Moreover, the round seal section 2 may be formed so that the perimeter of absorptivity goods may be surrounded, and it may be formed only in the flank of the both sides of the direction of X. The width of face of said round seal section 2 is about 1-4mm. Or along with the periphery of absorptivity goods, the round seal section opens spacing and may be formed.

[0022] Moreover, when Adhesives 13a and 13b open spacing mutually, distribute the whole region between each class the shape of a spiral, and in the shape of polka dots, and were formed in staging-area 1a and between the layers of periphery field 1b exfoliates within a septic tank etc. Invasion of the water of between a surface layer 10 and the absorption layers 11 and a between [the absorption layer 11 and the flesh-side surface layers 12] becomes easy, and hydration tends [further] to progress in staging-area 1a.

[0023] The exfoliation rate between the layers at the time of humidity is made quick weakly [bond strength / of the round seal section 2 in periphery field 1b]. In order to make bond strength in staging-area 1a higher than the round seal section 2 and to make the exfoliation rate between the layers at the time of humidity later than

the round seal section 2 It is desirable to use what is different with water-soluble thermoplastics layer 12r which demonstrates adhesive strength in the round seal section 2, and the adhesives 13a and 13b of the water solubility by which coating is carried out to staging-area 1a, or water bloating tendency.

[0024] For example, in order to form said round seal section 2, thermoplastics layer 12r prepared in the absorption layer side of the flesh-side surface layer 12 is a water-soluble polyvinyl alcohol film, and what the film of said poly vinyl alcohol laminated is used for the water-soluble nonwoven fabric or the paper which forms the flesh-side surface layer 12. Moreover, the adhesives 13a and 13b by which coating is carried out to staging-area 1a are water solubility or water bloating tendency, for example, the hot melt of poly vinyl alcohol is used.

[0025] If the round seal section 2 is formed by water-soluble poly vinyl alcohol in periphery field 1b, interlaminar peeling of the round seal section 2 in periphery field 1b will be quickly performed within a septic tank etc., as a result, water will infiltrate into staging-area 1a from periphery field 1b, and absorptivity goods will become easy to sink in a septic tank. If it sinks in a septic tank and a lot of water is given, in staging-area 1a, a surface layer 10, the absorption layer 11, and the flesh-side surface layer 12 are distributed with water, as a result, Adhesives 13a and 13b are water bloating tendency, or even if an aqueous rate is slow, absorptivity components will be soon disassembled by the hydration of each class.

[0026] In this case, by changing whenever [saponification / of Adhesives 13a and 13b], and a degree of polymerization, it can adjust so that adhesive strength may be higher than the water-soluble polyvinyl alcohol film which is the adhesives in said round seal section 2 and water solubility may be inferior. When body fluid is given to staging-area 1a at the time of wear by making high adhesive strength of Adhesives 13a and 13b, and reducing water solubility, it is hard to dissolve Adhesives 13a and 13b, and maintenance of a configuration is possible. And within a septic tank, exfoliation between the layers in staging-area 1a is also promoted with the water which permeates from periphery field 1b. Water-soluble adhesives usable as adhesives 13a and 13b can raise a water soluble polymer like the copolymer of cellulose, such as methyl cellulose, hydroxyethyl cellulose, and a carboxymethyl cellulose, polyvinyl alcohol, sodium alginate, sodium polyacrylate, the polyacrylic acid ether, a polyvinyl pyrrolidone, an isobutylene, and a maleic anhydride, starch, a dextrin, etc. Also in this, polyvinyl alcohol is desirable.

[0027] Moreover, the adhesives used for the round seal section 2 and the adhesives 13a and 13b applied to staging-area 1a are used as the adhesives which present almost equivalent water solubility, the amount of coating is changed, rather than the amount of coating in the round seal section 2, the amount of coating in staging-area 1a may be made [many], and bond strength may be changed by periphery field 1b and staging-area 1a.

[0028] In this case, as for the amount of coating of the water-soluble poly vinyl alcohol used as adhesives 13a or 13b (real eyes of jointing), it is desirable that it is

30 – 200 g/m². In this case, sufficient bonding strength for making a configuration hold at the time of use of the absorptivity goods 1 is demonstrated. Moreover, as for the polyvinyl alcohol by which coating is carried out between the surface layers 10 and the flesh-side surface layers 11 in the round seal section 2, it is desirable that 10–30 g/m² coating is carried out. Exfoliation between the layers in the round seal section 2 in periphery field 1b can be quickly performed now within a rinsing toilet or a septic tank as it is this amount of coating.

[0029] When it passes to a rinsing toilet, it distributes easily the stream or within a septic tank, and the flesh-side surface layer 12 can be formed with the hydration paper containing water-dispersion fiber, a water-soluble nonwoven fabric, etc. For example, the hydration paper formed in the shape of a sheet by the hydrogen bond of pulp fiber, using pulp as (1) raw material, (2) Hydration paper which was made to contain the water-soluble binder which combines fiber, using water-dispersion fiber, such as pulp and rayon, as a raw material, and was formed in the shape of a sheet, (3) — the hydration paper which was made to carry out the confounding of the water-dispersion fiber, and was formed in the shape of a sheet, and (4) — the water-soluble nonwoven fabric to which the confounding of the water-dispersion fiber with comparatively short fiber length was carried out by water jet processing can be raised. In addition, it is desirable to carry out coating of the water soluble resin, such as a copolymer which consists of polyvinyl alcohol or unsaturated carboxylic acid, to the outside (side which meets an external wearing object) of the flesh-side surface layer 12, and to process so that it may become non-liquid permeability.

[0030] The absorption layer 11 can be formed from for example, hydration paper, pulp, or a nonwoven fabric. For example, air RAID pulp etc. can be formed using eyes 50 – about two 70 g/m. When forming in hydration paper, and two or more sheets of hydration papers with comparatively thin thickness are formed in piles, water solubility is good and desirable. For example, eyes form the absorption layer 11 for about 4–8 sheets of hydration papers which are 10 – 20 g/m² in piles. Moreover, the laminating of the hydration paper which applied water bloating tendency resin, such as polyvinyl alcohol, may be carried out, and it may be formed.

[0031] A surface layer 10 is a water-soluble span ball-race nonwoven fabric. Or a water-soluble nonwoven fabric may be made to carry out the laminating of two or more sheets of hydration papers, and they may be formed in it. In this case, a nonwoven fabric and hydration paper may be made to unify by hydrogen bond or needling processing. Moreover, as for a surface layer 10, it is desirable that two or more apertures are extensively prepared as shown in drawing 1 in order to lead elimination liquid to the absorption layer 11 under a surface layer 10.

[0032] Drawing 4 is the sectional view showing the gestalt of other operations of this invention. Absorptivity goods 1A shown in drawing 4 is the point that thermoplastics layer 12r (for example, lamination of a water-soluble polyvinyl alcohol film) is not prepared in the flesh-side surface layer 12, and differs from the

absorptivity goods 1 shown in drawing 3 . In absorptivity goods 1A shown in drawing 4 , since resin layer 12r is not prepared, after the surface layer 10 and the flesh-side surface layer 12 have contained a small amount of moisture in the round seal section 2 of periphery field 1b, heating pressure treatment is carried out, and it is mutually joined by the hydrogen bond between fiber.

[0033] Hydrogen bond is weaker than the bonding strength by adhesives. Therefore, also in absorptivity goods 1A, the bonding strength by adhesives 13a of the surface layer 10 of staging-area 1a and the absorption layer 11 is higher than the bonding strength in periphery field 1b. Although the round seal section 2 by hydrogen bond with weak bonding strength is preferably formed in within the limits with a width of face of 8-20mm from the periphery field of absorptivity goods, i.e., periphery 1e, to the range of 2-25mm width of face, and a pan Since this field is the part which **** cannot generate easily due to a motion of the body at the time of wearing, by forming Adhesives 13a and 13b as mentioned above in staging-area 1a, the holdout of the configuration as the whole absorptivity goods is good, and gets twisted at the time of wear, and the exfoliation or the tear between **** cannot produce it easily.

[0034] Moreover, since absorptivity goods 1A separates from this hydrogen bond at the moment of being discarded underwater, water invades quickly from periphery field 1b, and hydration of a result and the absorptivity goods is carried out quickly and certainly. In addition, it is not necessary to pressurize a surface layer 11 and the flesh-side surface layer 12, to heat in a periphery field, but to form the round seal section in this invention. Also in this case, maintenance of a configuration is possible by the adhesives 13a and 13b of staging-area 1a.

[0035] Drawing 5 is the top view of this invention showing the gestalt of other operations further. It is not necessary to form the round seal section 2 in the perimeter of absorptivity goods, and you may prepare only in the both-sides section of the direction of X of absorptivity goods in this invention like absorptivity goods 1B shown in drawing 5 . In this case, if absorptivity goods 1B is discarded underwater, since water will permeate the interior of absorptivity goods 1B quickly from the edge in the direction of Y, hydration of the absorptivity goods 1B is carried out easily. In addition, the round seal section 2 may be formed in the shape of the between missing line.

[0036] In addition, in this invention, preferably, the adhesion section is prepared in the background of the body of absorptivity goods, i.e., the rear face of the flesh-side surface layer 12, (side which meets an external wearing object) all over the, and the release paper which protects the adhesion of the adhesion section further just before use is formed in it. As for this releasing paper, it is desirable that it is water solubility. Furthermore, as for the package bag of absorptivity goods etc., it is desirable that it is water solubility.

[0037]

[Example] Although an example is given and this invention is explained hereafter, this invention is not limited to this.

[0038] As an example of this invention, the panties liner was created as absorptivity goods shown in drawing 3 or drawing 4. The longitudinal dimension of this panties liner is 140mm, and a width-of-face dimension is 55mm. At this time, as for the surface layer 10, the wet span ball-race nonwoven fabric of eyes 45 g/m² and the absorption layer 11 used the air RAID pulp of eyes 60 g/m².

[0039] In the wet span ball-race nonwoven fabric of eyes 45 g/m², the flesh-side surface layer 12 in an example 2 is eyes 30 g/m², and the water-soluble polyvinyl alcohol film laminated it (flesh-side surface layer 12 in which resin layer 12r shown in drawing 3 was prepared).

[0040] What said water-soluble polyvinyl alcohol film does not laminate with the wet span ball-race nonwoven (flesh-side surface layer 12 shown in drawing 4) of eyes 45 g/m² was used for the flesh-side surface layer 12 in an example 1.

[0041] Moreover, using water-soluble polyvinyl alcohol hot melt adhesive, the adhesives in an example 1 and an example 2 are 7g/m², and carried out coating of the amount of coating to the shape of a spiral of 18mm of diameters. Moreover, the range which carried out coating is only a 18x100mm field in a staging area.

[0042] Furthermore, thermocompression bonding of the round seal section 2 was carried out from the periphery of a panties liner by width of face of 5mm from the location of 3mm to the staging-area side. The conditions of the thermocompression bonding at this time are 3922kPa(s) for 120 degrees C and 3 seconds. In the example 2, the aforementioned thermocompression bonding was performed, in an example 1, thermocompression bonding was not performed and the round seal section was not formed.

[0043] Each class of the example of a comparison was the same as that of said example, and the example 1 of a comparison did not apply adhesives to the staging area, but formed only the round seal section using a polyvinyl alcohol film. In the example 2 of a comparison, the round seal section was not formed but each class was pasted up with the hot melt adhesive of nonaqueous solubility in staging-area 1a.

[0044] About the obtained panties liner of an example and the example of a comparison, measurement of a wear test, a septic tank test, and a water-soluble test was performed, respectively. A result is shown in Table 1. Moreover, it examined like [example / of a comparison] the example.

[0045] (Wear test) I have ten panelists use a sample. The condition of a sample is visually observed after use. The evaluation approach is as follows. O : with no tear. x: Tear generating.

[0046] (Septic tank test) The sample was passed from the toilet bowl to the septic tank, and the behavior of a subsequent sample was observed visually. The evaluation approach is as follows. O : each class becomes scattering at the moment of going into a septic tank. x: Between each class does not dissociate.

[0047] (Water-soluble test) JIS P It measured according to the water-soluble test method of 4501. When detail was given, what cut the sample to 10cm by 10cm was

supplied to the beaker which is the capacity of 300ml containing 300ml of ion exchange water, and it agitated using the rotator. A rotational frequency is 600rpm. The distributed condition of the sample at this time was observed with time, and time amount until it distributes was measured. The evaluation approach is as follows.
O : it is hydration within 100 seconds. x: Don't carry out hydration.

[0048]

[Table 1]

表1

	実施例1	実施例2	比較例1	比較例2
表面層と吸収層の間の接着剤	有り	有り	なし	有り (非水溶性接着剤)
吸収層と裏面層との間の接着剤	有り	有り	なし	有り (非水溶性接着剤)
裏面層にラミネートされた樹脂層	なし	有り	有り	なし
ラウンドシール	なし	有り	有り	なし
着用テスト	○	○	×	○
浄化槽テスト	○	○	×	×
水解性テスト	○	○	○	×

[0049]

[Effect of the Invention] Since it is hard to separate each class which constitutes absorptivity goods in the water-soluble absorptivity goods of this invention as explained in full detail above, the configuration holdout at the time of use is high, and endurance is high. Moreover, since each class dissociates easily from a periphery field when it passed and throws away into a rinsing toilet, hydration is carried out easily and certainly.

[Translation done.]

* NOTICES *

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view of the absorptivity goods of this invention

[Drawing 2] The top view of the absorptivity goods shown in drawing 1

[Drawing 3] The sectional view of the III-III line of the absorptivity goods shown in drawing 1 and drawing 2

[Drawing 4] The sectional view showing the gestalt of other operations of the absorptivity goods of this invention

[Drawing 5] The top view of the absorptivity goods of this invention showing the gestalt of other operations further

[Description of Notations]

1 Absorptivity Goods

1a Staging area

1b Periphery field

1e Periphery section

2 Round Seal Section

3 Boundary Line

10 Surface Layer

11 Absorption Layer

12 Flesh-Side Surface Layer

12r A thermoplastic water-soluble-resin layer

13a, 13b Adhesives of water solubility or water bloating tendency

[Translation done.]

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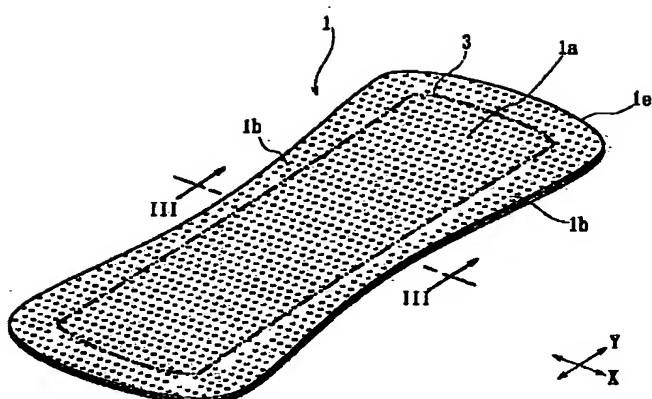
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DRAWINGS

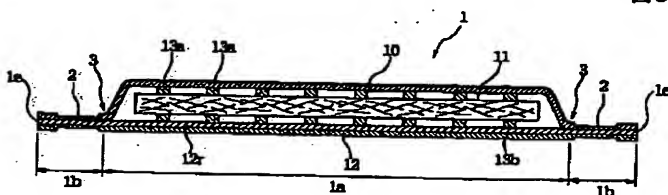
[Drawing 1]

図 1



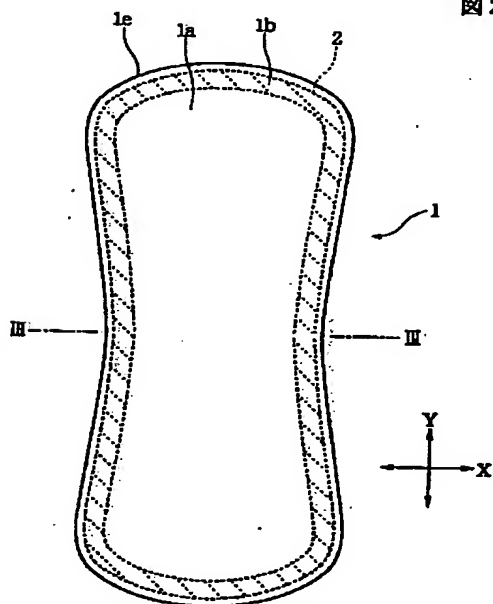
[Drawing 3]

図 3

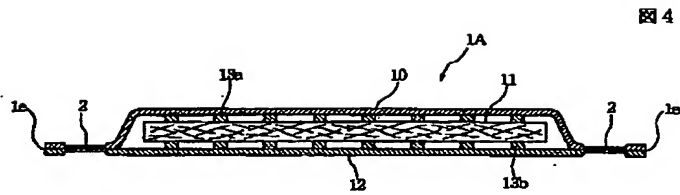


[Drawing 2]

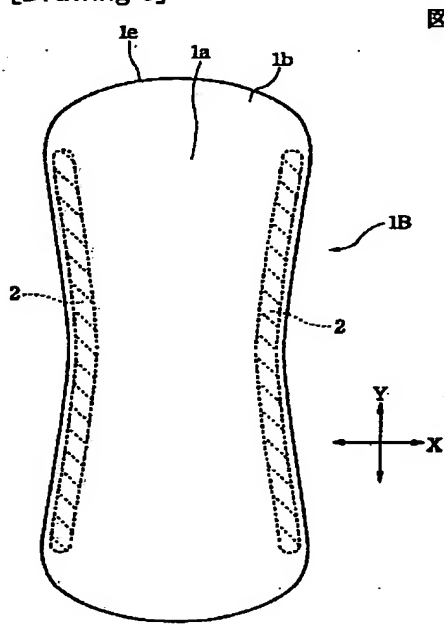
図 2



[Drawing 4]



[Drawing 5]



[Translation done.]